

The matter is of so much importance that the letters from Dr. C. B. Pinkham, secretary of the California State Board of Medical Examiners, and of Inspector J. W. Davidson, special agent of the board, are here reprinted for the information of California Medical Association members.

420 State Office Building

Sacramento, California,

November 20, 1933.

Re: Narcotic enforcement.

*To the Editor:*—We submit herewith enclosed a copy of a report written us by our Special Agent Davidson, dated November 14, 1933, drawing attention to the prevalence of doctors furnishing narcotics to confirmed addicts, based upon an alleged permit which these addicts may carry.

We leave to your judgment whether this merits special mention in "California and Western Medicine" warning doctors against this procedure, and suggesting that they confiscate any alleged "permits" that may come to their attention.

Very truly yours,

C. B. PINKHAM, M. D.,  
*Secretary-Treasurer.*

San Francisco, California,

November 14, 1933.

Re: Narcotics

(Clarence ———, alias Clarence ———).

Dr. C. B. Pinkham,  
Secretary-Treasurer, Board of Medical Examiners,  
420 State Office Building,  
Sacramento, California.

Dear Doctor:

The Narcotic Division has informed us that recently they have received reports showing the prescribing of morphine sulphate to the above-named addict, in each case stating that this man holds what purports to be a permit from the State Board of Pharmacy for him to have narcotics, as he is suffering from chronic asthma and angina pectoris.

This addict was recently arrested in Pasadena and at that time had \$130 in one-dollar bills in his pocket. However, the Municipal Court dismissed the case; reason not known.

From a report filed November 2, 1933, by Dr. ———, Anaheim, California, he furnished this man eighty one-half grain tablets of morphine sulphate, to last one week, stating that this man had been an habitu   for twenty-eight years and he furnished him narcotics because of the purported card authorizing the issuance of same.

Regardless of the warnings sent out by the Board, there seems to be no way that we can get the medical profession to use ordinary common sense in the handling of narcotics, and in the case of Clarence ———, the narcotic agent at Los Angeles had requested permission to arrest all of the doctors involved; however, authority so to do was not granted him and he was instructed to confer with the federal narcotic representatives in Los Angeles.

Is there any way that we could get co  peration from the various publishers of county medical bulletins, including "California and Western Medicine," to give publicity to the fact that there is no such authorization under the laws of the State of California or the Federal Government, showing that an addict is authorized to receive narcotics; and if any addict calls at

the office of a licentiate and offers any such document, the licentiate should take that document and keep it and immediately notify the police. The issuance of narcotics to addicts upon any such purported document, without the physician first making a physical examination and satisfying himself (the licentiate) that the patient has a pathology indicating the use of narcotics, is a violation of the law, and subjects the licentiate issuing such prescription or furnishing narcotics to such a person, to arrest for violation of the State Narcotic Law, with the subsequent humiliation that goes with it, as well as the reflection upon an honorable profession.

We are informed by those responsible for observance of the State Narcotic Act that if the medical profession insists upon being lax in prescribing narcotics, it may entail arrest in every case, and we are writing this with the hope that some publicity given the matter may engender respect for the state law.

The following named licentiates have recently reported Clarence ———, alias Clarence ———, as having one of these purported permits:

(EDITOR'S NOTE.—List includes two physicians from Pasadena, one from Los Angeles, three from Long Beach, one from Orange, and one from Anaheim. Names are here omitted.)

Very truly yours,

J. W. DAVIDSON,  
*Special Agent.*

## EDITORIAL COMMENT\*

### THE R  LE OF HYDROGEN ION CONCENTRATION (pH) IN CERTAIN OCULAR SYMPTOMS

The effect of the hydrogen ion concentration in tears or various medicaments dropped into the conjunctival sac seems to have received little or no attention in English or American ophthalmic literature until Gifford and Smith<sup>1</sup> called attention to it recently. A number of foreign investigators have published reports on the hydrogen ion concentration in normal tears, but they are by no means in agreement. Some investigation of the pH of tears in pathologic states have been recorded, notably those of Oguchi and Nakashima,<sup>2</sup> who worked principally on trachoma. They devised a technique for estimating the pH of conjunctival secretions as distinguished from the pH of the tears.

Gifford and Smith pointed out the advantages of suitably buffered solutions as a vehicle for the common therapeutic agents used in the eye, but the correlation of certain ocular symptoms with the hydrogen ion content of the tears has not been sufficiently studied, nor has the relief of symptoms, which is possible by a modification of the pH of the fluids in contact with the cornea and conjunctiva, been adequately investigated.

Therapy of corneal and conjunctival conditions is at present empirical and far from satisfactory.

\* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

<sup>1</sup> Gifford and Smith: Effect of Reaction on Ophthalmic Solutions, Arch. Ophth., Vol. 9 (Feb.), 1933.

<sup>2</sup> Oguchi and Nakashima: Hydrogen Ion Concentration of the Tears, Arch. f. Ophth., 119:300, 1927.

It is possible that much of the good effect attributed to various therapeutic agents depends on a modification of the pH of the tears. It is a suggestive fact that the rate of healing of the bruises sustained by ornamental tropical fish during shipment is profoundly modified by the pH of the water in which they live. Substances of the right degree of solubility and dissociation to produce a prolonged but slight modification of the pH of tears are by no means easy to find or devise, yet such substances probably offer therapeutic possibilities of great value. The effect of the pH on the bacteriolytic enzyme, lysozyme, must be considered. The efficiency of this enzyme is impaired by comparatively small amounts of acid or alkali, as well as by other chemical reagents.<sup>3</sup>

Cell permeability is greatly modified by reaction; for example, a one per cent cocaine solution at pH 8.7 is seven times more powerful than the same solution at pH 3.2.<sup>4</sup> Many students of glaucoma believe that its cause lies in the altered permeability of cells to ions and water, and that the pH of the intra-ocular fluids plays an important part in the disease and in its treatment with drugs. As the cornea acts as a semi-permeable membrane, it is conceivable that the pH of the tears has some relation to that disease. The rôle of the other ions present in the tears, particularly the chlorid ion, may be a fruitful field of investigation.

In the not distant future, apparatus for the determination of hydrogen ion concentration may become as essential as the ophthalmoscope to the practice of ophthalmology.

490 Post Street.

GEORGE N. HOSFORD,  
San Francisco.

### RELAPSING FEVER IN CALIFORNIA\*

**D**URING the past three years, studies have been made of several California strains of relapsing fever spirochetes, of human and animal origin. Comparisons have been made between some of these strains and *Sp. novyi*, *Sp. duttoni*, and certain Texas strains. The work has been detailed in four papers, which will appear in the *Journal of Infectious Diseases*.

This report merely summarizes some of the outstanding opinions and conclusions of the author regarding the California strains.

1. Three human strains cause a more severe infection in mice than either *Sp. novyi* or *Sp. duttoni*. This may be due to the more recent isolation of the former.

2. Symptoms in mice which were attributable to nerve lesions were noted.

3. Cryptic infections in guinea-pigs were observed with two strains. The serum of these animals was not protective. In later work, typical

infections in guinea-pigs were obtained, and their serums showed protective properties.

4. There appeared to be little, if any, difference in the virulence of blood taken during the primary attack and the first two relapses.

5. Immunity of variable duration is produced in mice by California strains. It makes no difference whether the test inoculations are made with blood from the same or a different stage of the disease from that which produced immunity.

6. There is cross immunity between homologous spirochetes in blood from different stages of the disease.

7. Complete passive immunity has been conferred to mice with the serum from recovered mice.

8. Complete cross protection has been obtained between several California strains. Several of these are probably identical, and a very close relationship exists between others. The areas from which some of these strains had their origin are several hundred miles apart.

9. Three mice hyperimmunized to a California strain (LN) were protected against *Sp. novyi*. The possibility is recognized that there may be a very close serologic relationship between *Sp. novyi* and our California strains. From the history of *Sp. novyi* it is possible that this strain may have originated in Texas (Galveston?), or some port in Mexico or Central America; and because of the probability that this strain and the California strain may have a common vector (*O. turicata*), particular attention is called to this result. This opinion is given further support by the findings of St. John and Bates<sup>1</sup> regarding the close relationship between *Sp. novyi* and the Panama strain.

10. The serum of a guinea-pig immunized against a Texas strain (Fall Creek) completely protected mice against large doses of the spirochetes of one California strain (162), and caused considerable delay in infection with two other California strains (LC and 334), of widely separated origins. It is highly probable that certain Texas and California strains may be closely related, if not identical.

11. From certain of my experiments it is believed that a more accurate technique, taking into account differences in virulence, should be employed in cross-immunity tests. Where such differences occur by a more careful management of the dosage, a relationship can be shown to exist between heterologous strains which, by grosser methods, would be considered to have only individual specificity.

12. Exhaustive tests with adult Sierra golden mantle ground squirrels (*Callospermophilus chrysodeirus*, *chrysodeirus* Merriam) showed that this species is probably immune from relapsing fever.

George Williams Hooper Foundation for Medical Research,  
Second and Parnassus avenues.

GEORGE E. COLEMAN,  
San Francisco.

<sup>3</sup> Fleming and Allison: A Bacteriolytic Ferment Found Normally in Tissues and Secretions, *Lancet*, 1:218 (Feb. 2), 1929.

<sup>4</sup> Regnier: The Influence of the Concentration of Hydrogen Ions—Anesthetic Properties of Cocain, *Bull. des Sciences Pharmacol.*, 31:513, 1924.

\* A preliminary report.

<sup>1</sup> St. John, L. H., and Bates, L. B.: *Am. J. Trop. Med.*, 2:251-266, 1922.